Gasteropods new to the New Zealand Fauna; with descriptions of Six New Species and a New Subspecies.

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Genus *Atalacmea* Iredale 1915.

Type (original designation): *Patella unguis-almae* Lesson 1830 (= *fragilis* Sowerby 1823).

Atalacmea multilinea n. sp. Figs. 1, 3.

Shell small, depressed, ovate, apex at anterior ninth, rather pointed and directed forwards. Colour white, crowded with numerous narrow concentric brown lines, three to four per millimetre. Interior of shell glossy and coloured exactly as the exterior. This species differs from fragilis in being slightly more elongate-ovate, and not quite so depressed. Also the radial sculpture is almost obsolete and the colour pattern most distinctive. Comparing specimens of both species of similar size, *multilinea* has 25 concentric colour bands and *fragilis* only 12. Marwick's *A. elata* (1928, Trans. N.Z. Inst., vol. 58, p. 473) from the Pliocene of Titirangi, Chatham Islands, seems to stand nearer to this new species than does the common Recent *fragilis*. The fossil species has somewhat similar, narrow, and numerous concentric colour lines, but differs from *multilinea* in being much more elevated and in having distinct radial sculpture.

Length, 8·75 mm.; width, 6·1 mm.; height, 1·75 mm. (Holotype).

Habitat: Kartigi Beach, North Otago, on under sides of stones at low tide. (Collected by the writer, January, 1928.)

The common *fragilis* (Fig. 2) was not found at Kartigi, although Oliver (1926, Trans. N.Z. Inst., vol. 56, p. 582) has recorded it from an adjacent locality, Shag Point. North of here, *fragilis* is common in both islands, but as I have no specimen from anywhere south of Kartigi, I am unable to say if the above new species is a regional one taking the place of *fragilis* for Otago.

Holotype: Presented to Auckland Museum.

Genus *Thoristella* Iredale 1915.

Type (original designation): *Polydonta chathamensis* Hutton 1873.

Thoristella chathamensis cookiana n. subsp. Figs. 10, 11.

Shell depressed conical, angled at the periphery; outline of spire evenly convex, the usual flattened shoulder and peripheral ridge being almost obsolete. Sculpture very regular, consisting of fine spiral cords with linear interspaces. There are 12 spirals on the penultimate whorl, 7 on the ante-penultimate, and about 29 on the body-whorl and base. The whole surface of the post-nuclear whorls is crossed by dense axial growth-striae, which shows quite plainly

in the interstices, but not on the cords themselves. Whorls 5, including a small smooth protoconch of 1½ whorls. Umbilicus almost filled with callus, leaving only a shallow pit.

Height of spire about equal to that of the aperture. Colour greenish-buff, the upper surface irregularly marked with radial blotches of dark-grey. Two of the cords of the spire whorls are coloured stronger than the rest. On the first post-nuclear whorl these cords are bright red, but the colour gradually changes to dark grey over the succeeding whorls, and finally loses its definition just before the body-whorl is reached. On the base there are no colour blotches, but the cords are intermittently marked with dark grey. Umbilical area and pillar white to pale buff, interior of aperture irridescent.

Height, 4·25 mm.; diameter, 6 mm. (Holotype).

Holotype: Presented to Auckland Museum.

Habitat: Island Bay, Wellington, under stones at low tide (type). Collected by the writer January 26, 1927. Goose Bay, Kaikoura, collected by the writer January, 1928.

The species is characterised by its fine regular and numerous spiral cords, and evenly conical spire with obsolete shoulder and no peripheral ridge.

Genus *Estea* Iredale 1915.

Type (original designation): *Rissoa zosterophila* Webster.

Estea semisulcata (Hutton 1885).

This species, originally described from the Wanganui Pliocene, is now known to the writer from Recent localities. Specimens from off the western coast of the Great Barrier Island in 6–10 fathoms and another from 20 fathoms off the Little Barrier Island have been compared with Castlecliff fossils and are found to be identical. The colour as shown by these living specimens is buff, with the spire whorls tinged with reddish-brown.

Genus *Roya* Iredale 1912.

Type (by monotypy): *Roya kermadecensis* Iredale.

Roya sp.

A single well-preserved specimen from shell-sand at Tom Bowling Bay is only half-grown. It is very close to the Kermadec Island genotype, but adult specimens are required before the specific identity of the New Zealand shell can be determined.

The New Zealand Recent occurrence of this genus is mentioned as Marwick (1931, N.Z. Geol. Surv. Pal. Bull. No. 13, p. 85) has previously recorded the genus from the New Zealand Tertiary, and has at the same time expressed a little uncertainty concerning the accuracy of his generic placing.

Genus *Polinices* Montfort 1810.

Type (original designation): *Polinices albus* Montfort (= *Natica mammillaris* Lamk).

Polinices simiae (Deshayes 1838).

This widely distributed species must now be added to the New Zealand faunal list, as four dead shells, collected at different times, have been picked up at Cape Maria van Diemen by Mr F. Young, the principal keeper.

The Cape Maria specimens are inseparable from Kermadec Island examples which have been determined as *simiae* by Iredale (1910, Pro. Mal. Soc., vol. 9, p. 71).

The original locality of the type of *simiae* is uncertain. Favanne and Chemnitz quoted "New Zealand," but Hedley has rejected this original locality reference as "certainly wrong," and has suggested that it "probably indicates Cook's voyage as the source of the specimens, so Cooktown may have been the locality of the type." (Hedley 1924, Rec. Aust. Mus., vol. 14, No. 3, p. 162.)

Genus *Austromitra* Finlay 1926.

Type (original designation): *Columbella rubiginosa* Hutton.

Austromitra erecta n. sp. Fig. 12.

Shell similar to *rubiradix* Finlay 1926, but more solidly built, proportionately wider, with a shorter spire and heavy flat-topped spiral ridges in place of fine spiral grooves. Apart from two strong spiral ribs proceeding from about the uppermost plait, the rest of the pillar and fasciole area is without definite sculpture, being almost smooth. The colour is identical with that of *rubiradix,* very dark purplish-brown, almost black, except for the pillar and fasciole, which is reddish-orange. Whorls about five, protoconch eroded. Spire less than height of aperture. Whorls slightly shouldered, angle at three-fifths height of whorl. Sculpture of spire whorls consisting of low, broad, flat-topped spiral ridges, with slightly narrower interspaces, crossed by distant axial folds. There are three spirals on the spire whorls, situated below the angle, and on the body-whorl and base there are nine. The axials number eleven on the penultimate, but on the body-whorl they become obsolete over the latter part. The four pillar-plaits are slightly stronger than in *rubiradix.*

Height, 9·75 mm.; diameter, 4·75 mm. (Holotype).

Holotype: In writer's collection, Auckland.

Habitat: Taupo Bay, Whangaroa. (Collected by Mr W. La Roche 1924.)

Genus *Buccinulum* Swainson 1837.

Subgenus *Euthrena* Iredale 1918.

Type (original designation): *Fusus vittatus* Quoy and Gaimard.

Buccinulum (Euthrena) suteri n. sp. Fig. 6.

Shell small, fusiform, and solid; sculptured with prominent spiral ridges and axial costae. Whorls 4¾ plus typical *Euthrena* type of protoconch of two whorls: tip smooth, followed by a half-whorl of axial ridges and another half-whorl reticulated by four

spiral riblets. Post-nuclear whorls prominently sculptured with broad flattened spiral cords having linear interspaces. There are four spiral cords on the upper whorls, five on the penultimate, and seventeen on the body whorl and base. Immediately below the suture there is a moderately wide, depressed band that is devoid of spiral cords, but bears three or more weak spiral threads. Axial costae eleven per whorl, broad and rounded, with narrow interspaces, not extending above over the subsutural band nor below on to the base. Spire tall, a little more than height of aperture plus canal. Aperture small, ovate, produced below into a short open canal. Outer lip thick, denticulate within. Inner lip with a distinct denticle above near the posterior notch, and two inconspicuous small ones below near anterior canal. The holotype is light brown with the spiral cords irregularly blotched with dark reddish-brown. The normal colouration, however, is the top half of the spire whorls and a broad band on the base, white; the rest of the shell including the fasciole with the spirals marked out in dark reddish-brown.

Height, 15·25 mm.; diameter, 7 mm. (Holotype).

Holotype: In writer's collection.

Habitat: Whangaroa Harbour in 10 fathoms (Mr W. La Roche 1922); Bay of Islands (Suter Collection, Wanganui Museum); Cape Palliser (Rev. W. H. Webster Collection, Auckland Museum).

This species is allied to *robustum* Powell 1929 and *colensoi* (Suter 1908), but differs in being much more slender and in having more numerous spiral cords.

The specimens in the Suter Collection are labelled *Trophon paivae* Crosse, but there is also in this collection a photograph of one of these specimens, on the back of which is pencilled, "*Cantharidus andersoni* Suter Holotype × 3." The *Cantharidus* is evidently a *lapsus calami* for *Cantharus,* the genus in which Suter placed his allied species *colensoi.*

Although this species has been labelled *Trophon paivae* by Suter, the shells are very discordant with his description and nothing like his figure of that species. Further, Iredale (1915, Trans. N.Z. Inst., vol. 47, p. 471) has pointed out that Suter's description does not apply to the type of *paivae,* and he has proposed the new name *Xymene quirindus* for Suter's shells. However, as no type was cited, and Suter's *paivae* was without doubt based upon a composite description, Finlay's (1926, Trans. N.Z. Inst., vol. 57, p. 421) rejection of Iredale's *quirindus* as indeterminable is well justified.

Genus *Iredalula* Finlay 1926.

Type (original designation): *Bela striata* Hutton.

Iredalula venusta n. sp. Fig. 9.

Shell moderately large, elongate, subcylindrical. Spire tall, one and one-third times height of aperture plus canal. Whorls 7 plus typical protoconch of 3 whorls, tip small, inrolled, smooth, remainder faintly shouldered. At first the protoconch is smooth, but gradually

spiral cords develop and on the third whorl number eight. Also over the latter half of the third whorl the spirals are crossed by distinct thin axials. Post-nuclear whorls narrowly shouldered; sculptured below this shoulder with prominent flat-topped raised spiral cords. The spirals number eight on the upper spire whorls, but increase to nine on the penultimate, and there are about 29 on the body whorl from the suture to the fasciole. The spiral sculpture continues over the rounded fasciole, but is much finer, closer, and less distinct. The intercostal spaces vary in width from a little less than the width of the cords on the upper whorls to a little more than their width on the upper portion of the body-whorl. Over the basal portion of the body-whorl the interspaces become gradually less and less until they are almost linear near the fasciole. Aperture elongate, narrow, contracted below into a short, open, weakly notched and slightly reflexed canal which is inclined to the left and bent backwards slightly. Interior of aperture and perietal wall smooth and polished. Colour pale buff.

Height, 23·75 mm.; diameter, 8 mm. (Holotype).

Holotype: In writer's collection, Auckland Museum.

Habitat: Off Cape Campbell in 40–60 fathoms, Marlborough. Obtained from the s.t. "Futurist" by Mr H. Hamilton, April, 1926. This very distinctive species is allied to *Pleurotoma (Hemipleurotoma) alticincta* Murd. and Sut. 1906, from 110 fathoms off the Great Barrier Island. The Cape Campbell species differs in having just double the number of spiral cords.

Genus *Liratilia* Finlay 1926.

Type (original designation): *Daphnella conquisita* Suter.

Liratilia subnodosa n. sp. Figs. 4, 5.

Shell small, robust, fusiform. Spire tall, a little higher than height of aperture. Whorls angled at the middle, 6, including conical protoconch of two smooth whorls. Sculpture consisting of weak flattened spiral cords separated by linear interspaces, and with a few blunt nodulous axials which are distinct at the angle, but rapidly diminish both above and below it. On the spire whorls there are nine spiral cords on the penultimate whorl in the holotype and 9–11 in paratypes. On the body-whorl and base there are 23 spirals. The axials number 10 per whorl. Aperture long and narrow, sides parallel medially, angled above and weakly notched below. Outer lip thickened within, bearing five apertural tubercles, of which the uppermost is by far the strongest. Ground colour pinkish-buff, irregularly mottled with light brown. Protoconch and interior of aperture uniformly light brown. Some paratypes are white, mottled with a dark reddish-brown.

Height, 7 mm.; diameter, 3·3 mm. (Holotype).

Holotype: Presented to Auckland Museum.

Habitat: Taupo Bay, Whangaroa (on under sides of stones at low tide. Mr W. La Roche).

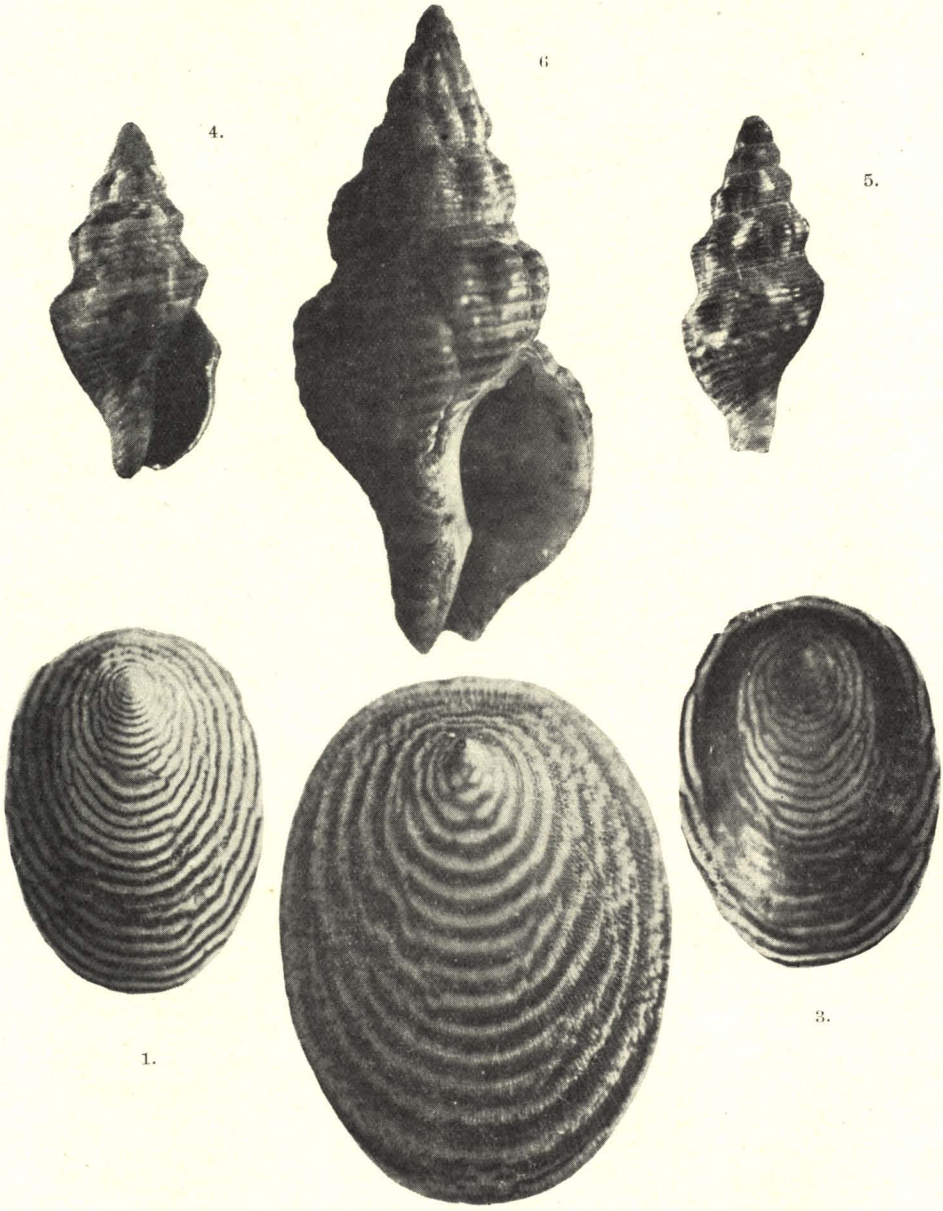

FIG. 1.—*Atalacmea multilinea* n. sp. (Holotype), dorsal, 8·75 mm. x 6·1 mm.
FIG. 2.—*Atalacmea fragilis* Sowerby. Kaikoura Coast.
FIG. 3.—*Atalacmea multilinea* n. sp. (Holotype), ventral.
FIG. 4.—*Liratilia subnodosa* n. sp. (Holotype), 7 mm. x 3·3 mm.
FIG. 5.—*Liratilia subnodosa* n. sp. (Paratype).
FIG. 6.—*Buccinulum (Euthrena) suteri* n. sp. (Holotype), 15·25 mm. x 7 mm.

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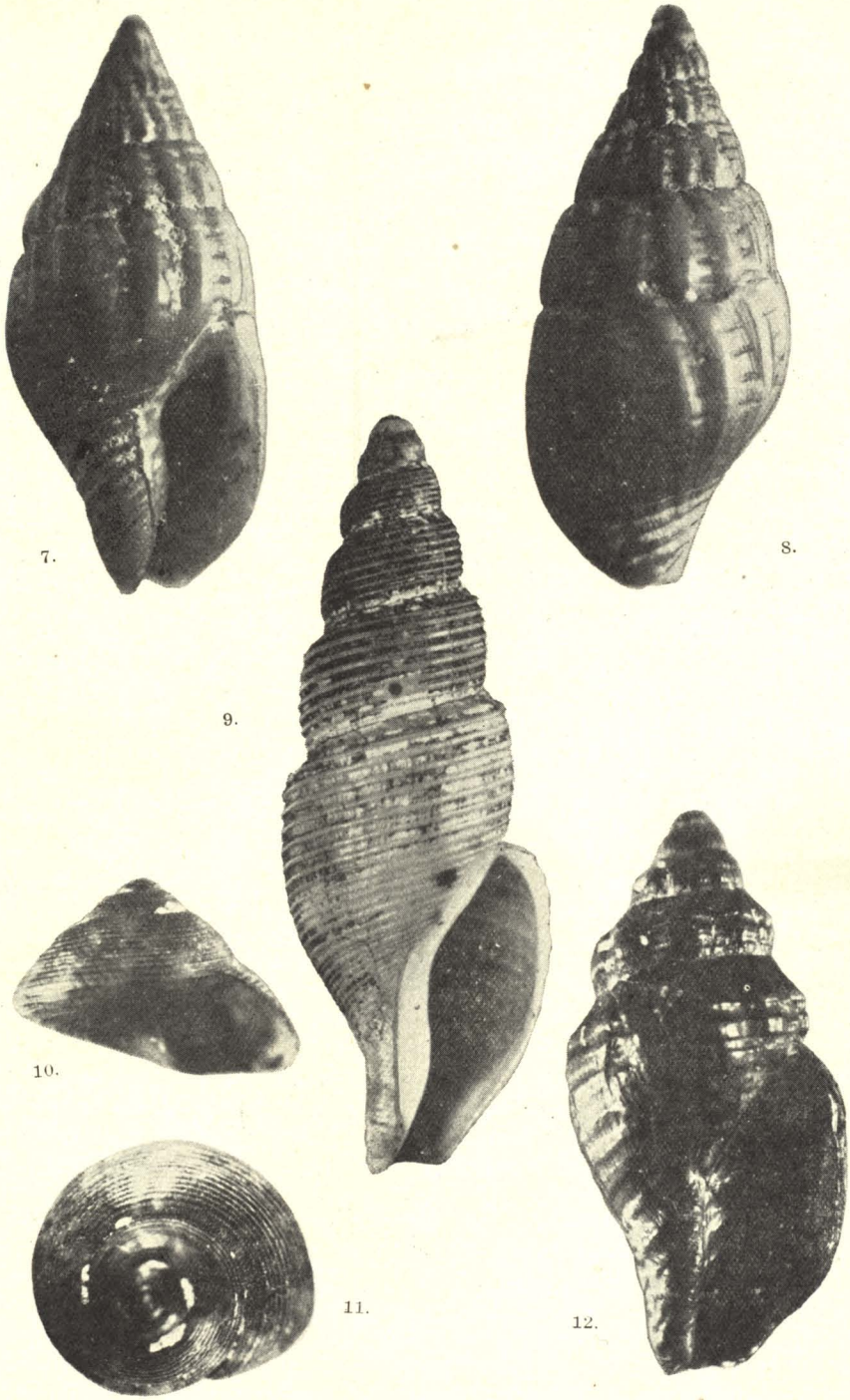

FIG. 7.—*Antizafra vivens* n. sp. (Holotype), 12 mm. x 5·25 mm.
FIG. 8.—*Antizafra vivens* n. sp. (Holotype).
FIG. 9.—*Iredalula venusta* n. sp. (Holotype), 23·75 mm. x 8 mm.
FIG. 10.—*Thoristella chathamensis cookiana* n. subsp. (Holotype), 4·25 mm. x 6 mm.
FIG. 11.—*Thoristella chathamensis cookiana* n. subsp. (Holotype).
FIG. 12.—*Austromitra erecta* n. sp. (Holotype), 9·75 mm. x 4·75 mm.

This new species resembles Murdoch and Suter's "*Pleurotoma (Leucosyrinx)*" *eremita* 1906, which is the only *Liratilia* previously known which has axials in addition to the normal spiral sculpture. From *eremita,* which is from 110 fathoms off the Great Barrier Island, the Whangaroa littoral shell differs in being less elongate and in having fewer and more persistent axials, which extend over the body-whorl. In *eremita* the axials occur only on the upper-spire whorls.

Genus *Antizafra* Finlay 1926.

Type (original designation): *Columbella pisaniopsis* Hutton.

Antizafra vivens n. sp. Figs. 7, 8.

Shell large, strong, fusiform. Spire slightly higher than aperture. Whorls 7, including an elongate-conic protoconch of two smooth whorls. Outline slightly concave above, much inflated medially, and contracted basally. Post-nuclear whorls sculptured with prominent axials and interstitial spirals. The axials are broad and rounded and extend from suture to suture on spire whorls, but become obsolete over the base. They number 16 on the body-whorl and 15 on the penultimate. The spirals are broad and flat and are rendered conspicuous only by the deeply scored linear interspaces. There are four of these flattened spirals on the spire whorls, and the body-whorl has in addition to these ten spiral ribs on the anterior end, six of which are closely spaced on the fasciole. The other four spirals are much more widely spaced (the interspaces equalling the width of the ribs), and these are situated immediately above the fasciole. Between the upper spirals and the basal series about one-third of the body-whorl appears to be smooth, but under a lens, and with lateral lighting, five almost obsolete spirals are indicated by exceedingly fine linear grooves. Aperture typical, rhomboidal in shape, produced below into a short, wide, slightly reflexed, and shallowly notched canal. Outer-lip straight, sharp, and thickened within, bearing five denticles, strongest above and becoming weaker in descending order. Columella short and straight and with a distinct basal fold. Colour uniformly light yellowish-brown, except for the apical whorls, which are tinged with pink.

Height, 12 mm.; diameter, 5·25 mm. (Holotype).

Habitat: Whangarei Heads in 4 fathoms (Captain J. Bollons).

Holotype: In writer's collection, Auckland.

This species is nearest allied to Marwick's *Anachis speighti* (1924, Trans. N.Z. Inst., vol. 55, p. 199) from the Pliocene of Petane, Hawke's Bay. Two other closely allied species occur at the same locality, and the three have been separated by Finlay (1926, p. 431) under a new genus *Antizafra.* From *speighti* the Recent species differs in larger size, greater inflation, and still further reduction of the spiral sculpture, the clathrate effect of the genotype being almost lost.

The weakening of the spirals in *vivens* brings this species near to *Zafra,* but the type of that genus, which has not been figured, is apparently without spiral sculpture, apart from oblique grooves on the anterior end.

Genus *Philine* Ascanius 1772.

Type ( ) *Philine aperta* Linn.

Philine angasi Crosse and Fischer 1865.

This species name has appeared in our faunal lists before (Hutton 1873, Cat. Tert. Moll. N. Zeal., p. 53, and 1878 Journ. de Conch., p. 41), but these records have been rejected by Suter (1909, Proc. Malac. Soc., vol. 8, p. 257) and the New Zealand species so identified described as a new subspecies, *Philine constricta auriformis.*

However, the writer finds that the Australian *P. angasi* really does occur in the waters of northern New Zealand. There is no mistaking *angasi,* for it is a large mollusc, one of the New Zealand specimens being 78 mm. x 41 mm. with a shell 26 mm. x 20 mm. Further, the shell of *angasi* can be distinguished at any stage by its smoothness, that of *auriformis* being spirally striated.

The writer has a spirit specimen of an adult *angasi* from Mansion House Bay, Kawau, and there are in the late Rev. W. H. Webster's collection, now in the Auckland Museum, shells and a stomach-plate from Orua Bay, Manukau Harbour. Unfortunately, in the case of Webster's specimens, Orua Bay and Tasmanian examples are mounted in the same box with no satisfactory indication of the respective localities of each specimen.

Description of Plates.

Plate 21.

Fig. 1.—*Atalacmea multilinea* n. sp. (Holotype), dorsal, 8.75 mm. x 6.1 mm.

Fig. 2.—*Atalacmea multilinea* n. sp. (Holotype), ventral.

Fig. 3.—*Atalacmea fragilis* Sowerby. Kaikoura Coast.

Fig. 4.—*Liratilia subnodosa* n. sp. (Holotype), 7 mm. x 3.3 mm.

Fig. 5.—*Liratilia subnodosa* n. sp. (Paratype).

Fig. 6.—*Buccinulum (Euthrena) suteri* n. sp. (Holotype), 15.25 mm. x 7 mm.

Plate 22.

Fig. 7.—*Antizafra vivens* n. sp. (Holotype), 12 mm. x 5.25 mm.

Fig. 8.—*Antizafra vivens* n. sp. (Holotype).

Fig. 9.—*Iredalula venusta* n. sp. (Holotype), 23.75 mm. x 8 mm.

Fig. 10.—*Thoristella chathamensis cookiana* n. subsp. (Holotype), 4.25 mm. x 6 mm.

Fig. 11.—*Thoristella chathamensis cookiana* n. subsp. (Holotype).

Fig. 12.—*Austromitra erecta* n. sp. (Holotype), 9.75 mm. x 4.75 mm.